Fast Track Troubleshooting

Model:
WF419AAW/XAA
WF419AAU/XAA

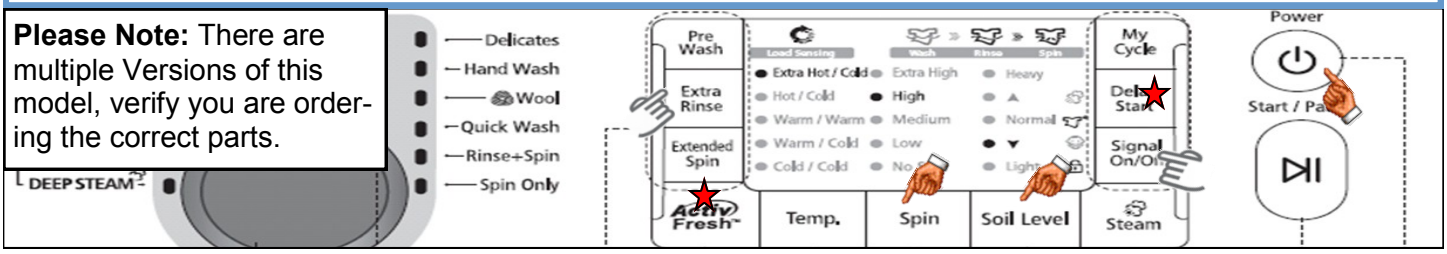
IMPORTANT SAFETY NOTICE – "For Technicians Only" This service data sheet is intended for use by persons having electrical, electronic, and mechanical experience and knowledge at a level generally considered acceptable in the appliance repair trade. Any attempt to repair a major appliance may result in personal injury and property damage. The manufacturer or seller cannot be responsible, nor assume any liability for injury or damage of any kind arising from the use of this data sheet.

SUPPORT INFORMATION

Publication # tsWF419 Revision Date 03/21/2011

Training — Plus One **http://my.plus1solutions.net/clientPortals/samsung/**
Help — GSPN **http://service.samsungportal.com/**
Samsung Product Support TV **http://support-us.samsung.com/spstv/howto.jsp**
Customer information videos and chat programs. Programs for Fridges, Laundry, Ranges & D/W

Please Note: There are multiple Versions of this model, verify you are ordering the correct parts.



Quick Test Mode

Note: This test erases all faults and memory:
To enter press Spin, *Soil, & Power* simultaneously with the power off.

1. All LED's light up and the washer beeps as it enters the Quick Test Mode.
2. The unit displays the software version for a second then clears the EEprom.
3. After the displaying the software version, LCD will display Model information. If EEEE is displayed the PCB ass'y is defective.
4. When the version is displayed, turn the Jog-Dial so that the version disappears. Press the following keys to test the various components

Press **Temp Key** to cycle through the Water Valves circuit test (lock the door first) in this order: Pre-Wash, Bleach, Cold Main, Hot, & Steam, then off.
Press **Spin Key** to test Door Lock/Unlock circuit.
Press **Soil Level** to test Heater.
Press **Signal Key** to test the Water/Steam Heater.
Press **Steam Key** to test the Pump

When either **Test or Spin** is displayed on the LCD, press **Start/Pause key** to conduct the motor test.
In **Test mode**, you can test the clockwise and counter-clockwise movement of the motor. However, the water level must satisfy the heater water level (24300) to enter Test mode.
In **Spin mode,** you can test the motor at a high rpm.

EEPROM Clear Check

Power off, Press Delay Start, Signal and Power Key at the same time. Good = Good Fail = FAiL

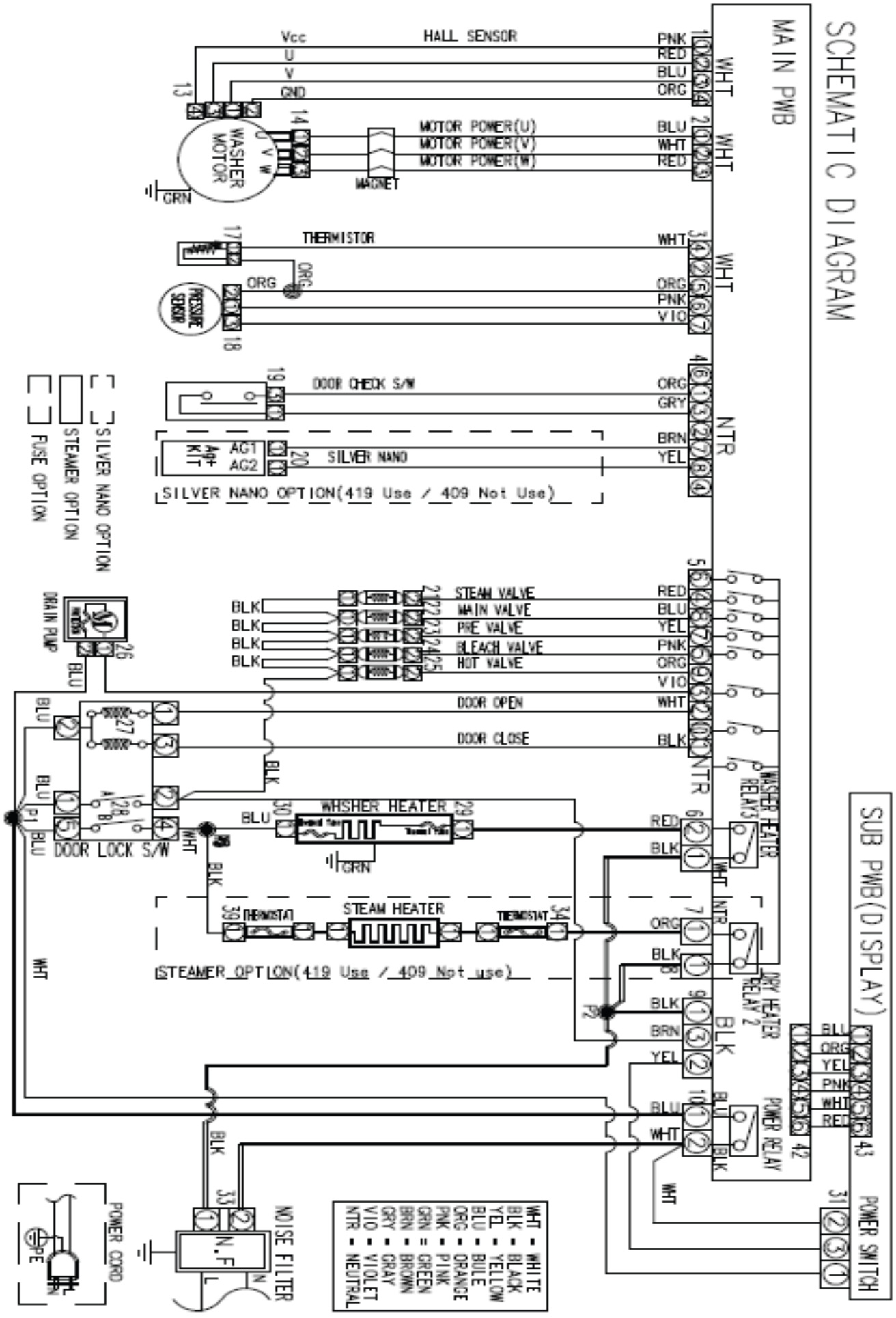
All memory will be cleared, including Fault Codes

This should be done when a new Main PCB is installed

Service Mode:

This mode allows more detailed operation tests and troubleshooting, to enter press *Signal & Extra Rinse* simultaneously with the power on.

While in Service Mode the following tests can be performed:
Quick Spin Test = Delay Start & Activ Fresh: ★ This accelerates the drum motor from 0 to maximum RPM over a few minutes. Note: Stay with the washer during this test, out of balance detection is bypassed and the door may not lock.
Press the Start/Pause button during the test to hold spin speed for 10 minutes before going back to Quick Spin Test Mode.
Cycle Count = Press the Signal button to see how many times the unit was used
Soft Ware # = Press the Soil button to see the software version information
Fast Time Down = Press the Temp button to advance to the next cycle
Fault Code Test = Press the Steam button to view the stored fault codes – then turn Jog Dial to view error codes (Push Start/Pause while the code is displayed to view the number of cycles since the error occurred)
Peripheral (Main PCB) input Tests
1. Select My Cycle. Then turn the Jog-Dial so that the **Extra Rinse LED** is turned on. Next, press the Start/Pause Key. The Water Temperature will be displayed in Fahrenheit.
2. Select My Cycle. Then turn the Jog-Dial so that the **Extended Spin LED** is turned on. Next, press the Start/Pause Key. The door status will be displayed (OP if open, CL if closed).
3. Select My Cycle. Then turn the Jog-Dial so that the **Delay Start LED** is turned on. Next, press the Start/Pause Key. The door lock Switch status will be displayed (UL if unlocked, Lo if locked).
4. Water Frequency/Water Sensor Testing - Select a cycle & start the washer, enter Service Mode & press My Cycle. Turn the Dial so that the **Steam LED** is turned on. Next, press the Start/Pause Key. The Water Frequency will be displayed. The frequency will change as the unit fills.
5. Select My Cycle. Then turn the Jog-Dial so that **Signal LED** is turned on. Next, press the Start/Pause Key. The AG Kit status will be displayed after 3 seconds. ("⊟E" if the AG kit is abnormal. "—" if the AG Kit is working properly)


SCHEMATIC DIAGRAM
MAIN PWB
SUB PWB(DISPLAY)
POWER SWITCH
HALL SENSOR
Vcc
U
V
GND
MOTOR POWER(U)
MOTOR POWER(V)
MOTOR POWER(W)
WASHER MOTOR
MAGNET
THERMISTOR
PRESSURE SENSOR
DOOR CHECK S/W
SILVER NANO
SILVER NANO OPTION(419 Use / 409 Not Use)
STEAM VALVE
MAIN VALVE
PRE VALVE
BLEACH VALVE
HOT VALVE
DOOR OPEN
DOOR CLOSE
DOOR LOCK S/W
WHSHER HEATER
STEAM HEATER
THERMOSTAT
STEAMER OPTION(419 Use / 409 Not use)
DRAIN PUMP
NOISE FILTER
POWER CORD
WASHER HEATER RELAY3
DRY HEATER RELAY 2
POWER RELAY
NTR
SILVER NANO OPTION
STEAMER OPTION
FUSE OPTION
WHT - WHITE
BLK - BLACK
YEL - YELLOW
BLU - BULE
ORG - ORANGE
PNK - PINK
GRN - GREEN
BRN - BROWN
GRY - GRAY
VIO - VIOLET
NTR - NEUTRAL

WF419AA*/XAA

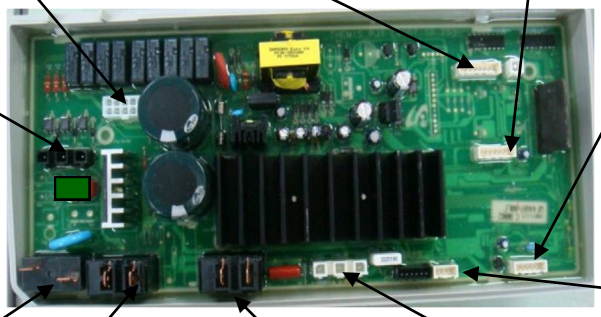
Washer Connector Checks WF419

CN3
1 Door Lock Close (Blk)
2 Door Lock Open (Wht)
3 Drain Pump (Vio)
4 Steam Valve (Red)
5 Bleach Valve (Pnk)
7 Pre Valve (Yel)
8 Main Valve (Blu)
9 Hot Valve (Org)

CN4
1 Door Sw (Org)
3 Door Sw (Gry)
7 AG Sensor (Brn)
8 AG Sensor (Yel)

CN7
4 Water Temp Thermistor(Wht)
5 Water Temp Thermistor Gnd (Org)
6 Water Level Sensor (Pnk)
7 Water Level Sensor (Vio)

CN8 (Display Connector)
1 T Comm Port (Blu)
2 R Comm Port (Org)
3 Rest Signal (Yel)
4 Ground (Pnk)
5 +5 vdc (Wht)
6 +15 vdc (Red)



CN2
1 AC Pwr (L) (Blk)
2 Pwr Sw (Yel)
3 Valves Common, Lock Sw (Brn)

CN6 (Hull Sensor)
1 +5 vdc (Pnk)
2 Sensor Signal (Red)
3 Sensor Signal (Blu)
4 Ground (Org)

RY4 Steam Heater Relay
1 (Org)
2 (Blk)

RY1 Power Relay
1 (Blu)
2 (Wht)

RY2 Washer Heater Relay
1 (Blk)
2 (Red)

CN5
1 Motor Pwr U Phase (Blu)
2 Motor Pwr V Phase (Wht)
3 Motor Pwr W Phase (Red

Water Temperature Thermistor Check	Test 1	Test 2
Connector CN 7 Pin 4 (White) and CN7 Pin 5 (Orange)	Operating voltage at Room temperature	Operating Resistance at Room Temperature (Power off) Dis-connect CN7
	4.2VDC (5VDC May indicate a connector issue)	50-57kΩ
Door Switch Check	Test 1	Test 2
Connector CN4 Pin 1 (Pink) and CN4 Pin 3 (Gray)	25VDC Door Open, 0VDC Door Closed	Operating Resistance with power off
		24kΩ
Water Level Sensor Check	Test 1	Test 2
Voltage: Connector CN 7 Pin 6 (Pink) and CN7 Pin 5 (Orange) And Connector CN 7 Pin 7 (Violet) and CN7 Pin 5 (Orange) Resistance: Connector CN 7 Pin 6 (Pink) and CN7 Pin 7 (Violet)	Operating voltage at no water in the drum-	Operating Resistance (Power off)
	2.5VDC	Pin 6 (Pink) and Pin 7 (Violet) 22- 24Ω
Hall Sensor Check	Test 1	Test 2
Connector CN6 Pin 4 (Orange) and Pin 2 (Red) additionally Pin 4 (Orange) and Pin 3 (blue)	Manually spin the drum to see the voltage change, Power On	N/A
	0Vdc or 3.75Vdc	
Motor Check	Test 1	Test 2
Connector CN5 Pin 1 (Blue), Pin 2 (White) and Pin 3 (Red)	Power Off 11.5Ω across Pins 1-2, Pins 1 -3, & Pins 2-3	N/A
A/C Power Check	Test 1	Test 2
Connector CN 2 Pins 1 (Black) and 2 (Yellow)	Power On 120VAC	N/A

Door Lock Check	Test 1	Test 2
Connector CN2 Pin 3 (Brown) and CN3 Pin 1 (Black)	When Door is Locked or Unlocked there is a pulse of 120VAC for a few milliseconds.	With Power Off, the resistance between these pins will be between 47 - 57Ω
Door Unlock Check	Test 1	Test 2
Connector CN 2 Pin 3 (Brown) and CN3 Pin 2 (White)	When Door is Locked or Unlocked there is a pulse of 120VAC for a few milliseconds.	With Power Off, the resistance between these pins will be between 47 - 57Ω
Drain Motor Check	Test 1	Test 2
Connector CN2 Pin 3 (Brown) and CN3 Pin 3 (Violet)	120VAC with the pump On and 0VAC with the pump off	Power Off, the resistance should be 13.9Ω
Water Valve Check	Test 1	Test 2
Connector CN2 Pin 3 (Brown) to CN3 Pin 5 (Pink), Pin 4 (Red) , Pin 7 (Yellow), Pin 8 (Blue), Pin 9 (Orange)	120VAC with the Valve On and 0VAC with the Valve off	Power Off, valve resistance is from 1202Ω - 1245Ω
Heater Relay Check	Test 1	Test 2
Connector CN2 Pin 3 (Brown) and RY3 (heater relay) Pin 2 (Red)	120VAC with the Heater On and 0VAC with the Heater off	Power Off, heater resistance is 16.6 Ω
Steam Heater Relay Check	Test 1	Test 2
Connector CN2 Pin 3 (Brown) and RY4 (heater relay) Pin 1 (Orange)	120VAC with the Heater On and 0VAC with the Heater off	Power Off, heater resistance is 15.6 Ω

Error Type	Error Mode		Details
	LED	LCD	
Water Level Sensor	LE 8		Check the Hose where the sensor is connected, may be loose, pinched, damaged or clogged. Also check the sensor it may be disconnected or defective. The Main PCB may also be defective
Motor Drive Error or Hall Sensor error	3E E3 bE 25		Check the motor drive connector, it may be loose. The hall sensor may be disconnected, loose or damaged . Check for a foreign object inside the motor or motor damage. The stator might be loose or damaged. The drum might be overloaded from too many clothes or the relay or PCB might be defective.
Water Supply Error	nF 3		Check the water valve wiring harness. Check whether the water supply valve is clogged with foreign material and whether water is supplied properly. Check for reversed fill hoses Check water temperature, if sensed as higher than 50 ˚C in the Wool or Lingerie cycle it will create error. Check the relays, if they operate correctly replace the Main PCB.
Fill Hoses Reversed	nF1		Correct Hot/Cold hose connections
System Error	SF1 SF2 SF3		Replace PCB

Error Type	Error Mode		Details
	LED	LCD	
Drain Error	nD 1		Check for Foreign material entering the pump or hoses. Check to make sure the wiring harness is connected properly. Check the water pump terminal . Check for freezing
Power Error	2E 91 92		Make sure to check the operating voltage. (An error occurs when under or over voltage is supplied.) Check whether a plug receptacle is used. When the connecting wires are too small (extension cord use), a momentary low voltage may drop up to 10 V Main PBA fault (sometimes)
	PF		Momentary Power Failure
Communication Error	AE		Check the wire connections and terminal contacts between the sub and main PBAs. Check for disconnected wires. Check whether the sub PCB is short circuited because of moisture. If the main PCB's communication circuit is faulty, replace it.
EEPROM Fault.	11		Go to "EEPROM Clear Mode" If display shows "FAiL", Replace Machine Control Board
Switch Error (Main Relay Error)	E2 15		Check whether either the Power switch or a tact switch (any button) is stuck down. Check whether the service PBA holding screws are fastened too tight pinching the contacts If the main PBA switching IC on/off error has occurred, replace the main PBA. The "E2" error occurs if the main relay connections are incorrect. Check the connections. If there is no error in the connections, replace the main PBA
	SR		
	dS 22 (Before operation)		Check the door switch and latch alignment . Check the latch for damage Check the wiring harness to the latch. Check the door switch. Replace if faulty. Check the main PBA door sensing circuit. Replace if faulty. Finally verify he operation of the Main PCB
Door Error	dL 18 (During operation)		
	LO 2 (Unlock Fail)		
	FL 4 (Lock Fail)		

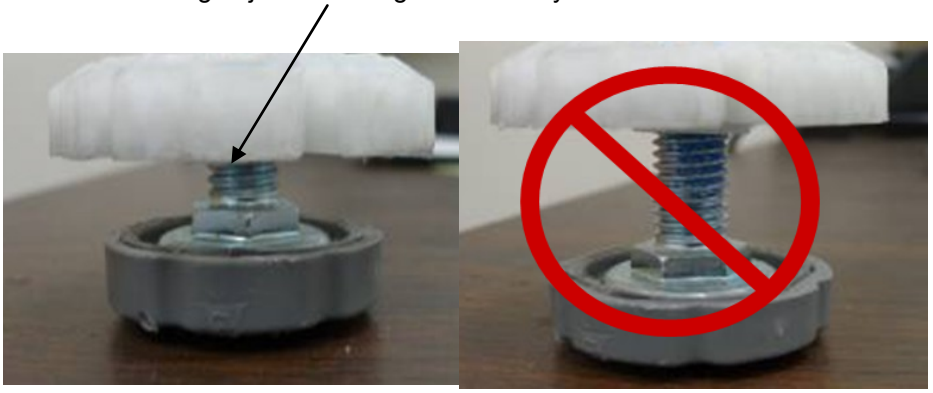
Error Type	Error Mode		Details
	LED	LCD	
Heater Error	Hr 36 (Heater Relay)		This can be a short or a wire disconnected to the heater circuit. This can also be problem with the tub contacting the heater or if the water in the tub is frozen or there is no water. The error is triggered by temperatures above 145C. If the heater has no error, this occurs because of a PBA relay malfunction. Check the wiring harness to the heater. An Hr error occurs if the steam heater, is faulty, replace it.
	9E1		EMC Filter issue or a noise spike from an external device
Overflow error	OE E		Water is supplied continually because the water level detection does not work. - Verify the drain is working properly, the water level detection does not work and water is supplied continually. Verify the water valves shut off fully. Finally check the water level sensor.
Temperature Sensor Error	29 		The washing heater temperature sensor in the tub has an error. Check the connections for the washing heater temperature sensor connector.
Unbalance Error	dC 10		Check the type of laundry. Check whether it may cause an unbalanced situation.- Educate the consumer in this case, to press pause, reposition the load or remove a few items. Press start to continue and complete the wash cycle.
Silver Care Kit (Silver Care PCB) Failure.	7E		Check Silver Care PCB ,Main PCB & Wire-harness
Mems or Harness Failure	8E		Check MEMS PCB ,Main PCB & Wire-harness
Foaming Detected	SUdS Sd		This occurs when too much foaming is detected. It is also displayed while foaming is removed. When the removal is finished, the normal cycle proceeds. (This is one of the normal operations. It is an error for preventing non-sensing faults.)

Check whether the washing machine is level to the floor with respect to the original position of the washing machine prior to service. Doing this now will reduce the need for a redo call and customer dissatisfaction.

✓ Vibrations can shorten the lifetime of the product.

Foot Pad for Walking Washer, There is one in each package, so order 4

When installing a washer and dryer on the first, or second floor, do not exceed this leg adjustment height for stability.



Water valve connections for the Detergent Drawer

V#1	V#2	V#3	V#4	V#5
MAIN(H)	PRE WASH	BLEACH	MAIN(C)	STEAM

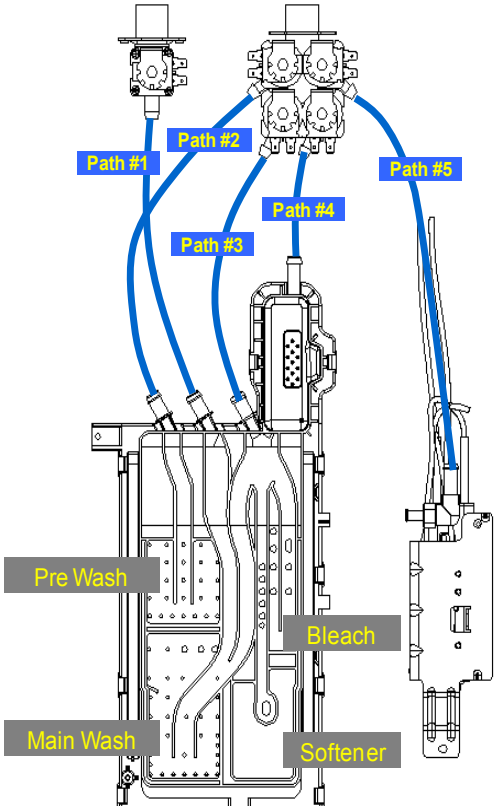
Items Packed With Washer

BOLT-SPANER (10-13mm Wrench) DC60-40146A

ASSY HOSE WATER DC97-15691A and DC97-15692A

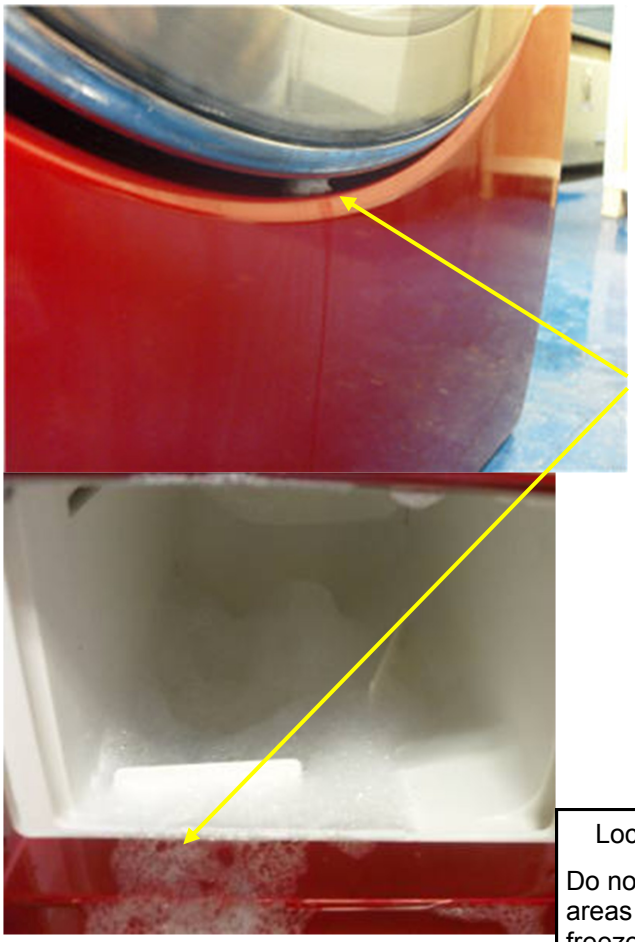
MANUAL-BOOK DC68-02535A

CAP-FIXER DC67-00307A HOSE-HANGER DC62-10278A



Stacking Kit : (Model No : SK-3A1/XAA, SK-4A/XAA, SK-5A/XAA)

Samsung washers and dryers can be stacked to maximize usable space. An optional stacking kit is available for purchase from your Samsung retailer



When using non-HE detergents, or using too much detergent for the water hardness and soil level of the clothing, over sudsing will occur. When this happens there will be leaks out of the detergent drawer and door. Please advise consumer of proper detergent usage.

It is normal for a small amount of water remaining in Detergent Drawer after it completes washing. Bleach is usually flushed out into the tub at the beginning of the washing. Also, its compartment is washed again during the following rinse cycle, removing any remnants.

Selecting Language

1. The “Select the Language” message appears.
2. Turn the Jog Dial to select language
3. Press Signal button to select

Location considerations

Do not install your washer in areas where water may freeze, since your washer will always maintain some water in its water valve, pump, and hose areas. This can cause damage the belts, the pump, hoses and other components. **Operating temperature should be above 60°F/16°C.**

NOTICE

The unit sometimes will pause during Sanitize, or Pure Cycle, wash modes and appear not to be functional. The Sanitize and Pure Cycle wash cycles have target temperatures to assure washer performance. If the water temperature doesn't meet the target temperature during the wash cycle, the washer will automatically add extra time to allow the heater to bring the water up to the programmed, or target temperature. In this stage, the displayed time will pause and hold until the heating operation has been completed. It is at this point that the customer may feel that operation has stopped. (The maximum added programmed time is 30 minutes)